

Geel 2000 language school

Prep 1

First term



Name: -

Class: -

Lesson 1: Green Technology

Green Technology:

- It is sometimes called (sustainable technology or clean technology)

The idea of green technology rely on what are the tools of technology that helps to preserve the environment, and conserve its resources.



In Egypt:

Egypt has recently been interested in using

Electric cars instead of fuel-powered cars, to reduce the percentage of harmful emissions from car exhaust on the one hand, and reduce the percentage of fuel use on the other hand.

- Electric cars operate with batteries, as they are equipped with a charge place that allows the car to

Be connected to an external source of electricity to do charging.

Green technology utilization areas:

- Green technology is used in many areas of life, including:

1. Renewable Energy:

- ❖ **Solar energy:** Using solar panels to convert sunlight into electricity.
- ❖ **Wind energy:** Using wind turbines to generate Electricity from the movement of air.

- ❖ **Hydropower:** Using dams to generate electricity from the movement of water.
- ❖ **Geothermal energy:** Using the heat of the Earth's internal to generate electricity.
- ❖ **Bio energy:** Using organic materials such as soybeans and corn to generate energy.

2. Rationalization of energy consumption and responsible utilization:

- ❖ **Green Buildings:** The construction and design of buildings using environmentally friendly and energy-saving materials, improving ventilation and insulation.
- ❖ Use of **energy-efficient electrical appliances** and high-efficiency computers.
- ❖ **Smart transportation:** Use of electric vehicles to improve energy efficiency in transport sector.

3. Waste Recycling:

- ❖ Recycling recyclable materials such as paper, plastic and metal into new products.
- ❖ Converting organic waste into nutrient-rich compost to improve soil fertility.
- ❖ Reduce the amount of waste produced through reuse and product repair

4. Water treatment

- ❖ Purify contaminated water for reuse or drinking.
- ❖ Use smart water-saving irrigation systems such as drip irrigation.
- ❖ repairing water leaks and use water-saving devices to rationalize water consumption.



Benefits of Green Technology:

1-Keep the environment from changing:

- The impact of car exhaust has increased the amount of carbon dioxide in the atmosphere and increased the greenhouse effect, leading to environmental damage. And it helped to focus on transportation that minimized the damage, such as
- electric cars that reduced the amount of carbon dioxide in the atmosphere and reduced the amount of environmental pollution.

2 -Conserving resources (water - electricity):

Green technology helps save water and electricity through many things, including:

- **Body sensors** (sensors) through which the water in the taps is turned on/off as a result of the presence of the body (hand) under the tap, which allows the flow of when needed.
- **Electricity consumption** can also be rationalized inside homes and companies through the same idea of sensors with objects. Electric lights can be turned on/off when needed.
- **Solar energy technology** that relies on the use of **photovoltaic panels** and converting them into electrical energy. And operating them automatically when needed.

The usage of sensors:

- The sensors are used for a variety of tasks including:
 1. regulating temperature .
 2. operating the lights through various methods.
 3. Detecting smoke from fires.



Exercise lesson 1

1 Choose the correct answer:

- 1 Green technology is also known as technology
 - a. clean
 - b. sustainable
 - c. harmful
 - d. both a and b
- 2 Egypt is interested in to protect the environment.
 - a. diesel cars
 - b. electric cars
 - c. gas cars
 - d. none of them
- 3 Electric vehicles use to operate.
 - a. gas
 - b. batteries
 - c. the Sun
 - d. wind
- 4 One of the fields of using green technology is
 - a. fossil fuels
 - b. renewable energy
 - c. chemical production
 - d. mining
- 5 Renewable energy is such as
 - a. wind power
 - b. solar energy
 - c. fossil fuel
 - d. both a and b
- 6 Solar energy uses to generate electricity.
 - a. solar panels
 - b. wind turbines
 - c. dams
 - d. batteries
- 7 Green buildings use to reduce energy consumption.
 - a. harmful materials
 - b. nuclear energy
 - c. eco-friendly materials
 - d. gas heaters
- 8 using the Earth's internal heat to produce electricity.
 - a. Electricity
 - b. Geothermal energy
 - c. Solar energy
 - d. Wind power

Lesson 2: - Digital Transformation

Is the combination of digital technology into all aspects of work to improve workflow efficiency, reduce costs, and develop products and services provided in new innovative ways.

The importance of digital transformation

Digital transformation. for institutions and companies for several reasons, including:



- 1- **Enhance efficiency and productivity:** by improving workflow and reducing errors, saving time and effort, which saves money.
- 2- **Enhance the quality of services and products** provided to customers.
- 3- **Enhance sales and revenues** by reaching new markets and new customers
- 4- **Innovation and creativity:** Digital transformation contributes significantly to enhancing innovation and development in institutions and companies to provide new and good products and services.
- 5- **Sustaining competitiveness** through coping with the most recent technological advancement.
- 6- **Enhancing decision-making** by offering timely data, information, and analysis to facilitate informed decision
- 7- **minimizing energy and resources consumption.**
- 8- **Creating new employment opportunities.**

Heading Towards digital transformation in Egypt:

- Digital transformation is a national project that moves Egypt to deal through an information environment that links all government agencies to each other.

- Citizens can obtain all their services through the Internet and mobile applications, to provide various services and products to citizens in an easier and faster way.

What are the tools of digital transformation?

- Many digital transformation tools are available through programs, technologies and services that help institutions and companies improve performance, efficiency and competitiveness, including:
- Workflow management tools
- Electronic payment tools
- Collaboration and communication tools
- E-learning resource
- Artificial intelligence and machine learning technologic
- Cloud computing technologic
- Cybersecurity solution.



1- Workflow management tools

Improving the efficiency of repetitive operations and tasks.

Such as the "Digital Egypt" platform, which aims to improve the efficiency of government operations and provide better services to citizens.

Digital Egypt platform

It is a government electronic portal that provides many electronic services to citizens.

Such as paying electricity and water bills.... by downloading the application and using it on a mobile device.

2- Electronic payment tools

Such as **electronic payment cards**, which provide easy, fast and secure electronic payment methods to facilitate electronic financial transactions for citizens.

- The **INSTAPAY** electronic payment system application, licensed and approved by the Central Bank of Egypt, allows sending and receiving money through a bank account or electronic wallet and provides many services such as paying bills.



3-Collaboration and communication tools an

Google meet / Zoom programs Video calling and online conference applications that you can use to communicate with others face to face.

Such as Google meet / Zoom programs Video calling and online conference applications that you can use to communicate with others face to face.



Note

- * That to obtain any of the digital services or products, you must have an email.
- * The relationship between green technology and digital transformation

The following table shows the most important common axes between green technology and digital transformation:

Examples of green technology and digital transformation applications together:

- ✓ Smart energy grids
- ✓ Precision agriculture
- ✓ Smart buildings
- ✓ Smart transportation
- ✓ Smart cities

Benefits of linking green technology with digital transformation:

- speeding up the process of the digital transformation.
- Enhancing the effectiveness of green technology.
- Creating new employment opportunities.
- Improving the quality of life.

Main common themes	Green Technology	Digital Transformation
1- Enhancing the efficiency of resource use	Reducing the consumption of natural resources, such as energy and water, by using efficient technologies	Dependence on raw materials (paper pens...), and reducing waste.
2-Reducing harmful emissions:	Using renewable energy sources And improving energy efficiency.	Reducing the need for transportation and mobility and improving the efficiency of business operations.
3-Supporting sustainability:	By protecting the environment and improving the quality of life for future generations	By improving the use of resources, reducing emissions, and enhancing innovation.



1 Choose the correct answer:

- 1 Digital transformation involves combination of into all aspects of business.
 - a. digital technology
 - b. paper documents
 - c. raw materials
 - d. traditional methods
- 2 The "Digital Egypt" platform is
 - a. a social media app
 - b. an e-government service
 - c. a video game
 - d. a fitness tracker
- 3 One of the importance of digital transformation is
 - a. slowing workflows
 - b. increasing costs
 - c. enhancing efficiency
 - d. reduced innovation
- 4  When using the Egypt Digital Portal, it is regarded as one of the
 - a. piracy forms
 - b. digital transformation tools
 - c. irresponsible website usage.
 - d. electronic assault forms
- 5 Digital transformation primarily aims to
 - a. increase costs
 - b. reduce efficiency
 - c. enhance workflow
 - d. limit innovation
- 6  Electronic payment applications can be used within the app
 - a. INSTAPAY
 - b. Google Meet
 - c. WhatsApp
 - d. Email
- 7 INSTAPAY is used for
 - a. video conferencing
 - b. electronic payments
 - c. document scanning
 - d. weather forecasting

Lesson (3): Operating Systems

- In previous classes, we studied operating systems and software, and learnt about the importance of the operating system and the hardware components of a computer.

Definition of an operating system:



- the interface between the user and the hardware and software,
- it is responsible for
 1. managing the hardware components.
 2. running all the software.
 3. helping the user accomplish various tasks on the computer easily and smoothly.

key function of the operating system

- Manages hardware components
 - Provides a user interface
 - Manages memory
 - Ensures security and productions
 - Manages the file system
- Modern electronic devices, smart devices, and operating system used in our lives
- Operating system are necessary for running and managing various modern electronic and smart devices

examples of operating systems

1. Personal computers (PCs):

Desktops and laptops use operating systems such as Microsoft Windows, macOS, and Linux with different distributions.



2. Mobile Devices:

Smartphones and tablets are based on operating systems such as:

- ✓ Apple's iOS
- ✓ MOBILE OPERATING SYSTEM Google's Android
- ✓ Other mobile operating systems

3. Servers:

Servers use operating systems such as:

- ✓ Linux with its (various distributions)
- ✓ Microsoft Windows Server



Other specialized server operating systems to manage network resources and provide various services.

4. Gaming Consoles:

Gaming consoles such as **PlayStation**, **Xbox** and **Nintendo Switch** have their own operating systems optimized for gaming and multimedia applications.

5- Smart TVs:

Smart TVs run on operating systems such as **Android TV**, **Tizen**, and **webOS**, and others to provide smart advantage such as streaming services application, and internet connectivity.

6- Wearable Devices:

Wearable Devices such as **smartwatches** and **fitness trackers** use operating systems specifically designed for their unique functions and requirement

7- Network Devices:

Routers, switches, and other network equipment use operating systems to manage the network, settings, and security features of the network.

8- Automotive Systems:

Modern cars and vehicles often contain operating systems to control various functions such as infotainment systems, navigation, and driver assistance technologies while driving and controlling the vehicle.

9- Embedded Systems:

Operating systems are used in embedded systems such as:

- Automated Teller Machine (ATM)
- Point of Sale Terminal (POS)

Point of Sale Terminal (POS): It is an electronic device through which the customer can pay for the products he purchased, and the price of those products will be deducted from his bank account instead of paying for them in cash.

10- Industrial Control Systems (ICS):

It is a broad term that includes many industrial control systems and devices that are used in industrial facilities to control the performance of machines and industrial processes:

Industrial control system (ICS)

- Control and monitor the flow of industrial processes, which increases the productivity of factories and improves the quality of manufactured product.
- Provide a safe environment for health and operational safety by reducing exposure to hazardous substances or environments such as chemical plants, water and waste treatment centers, nuclear power plants, and refineries.
- Industrial control systems are used in most industry sectors such as energy, transport, food production, petrochemical, electronic, medical and many other industries.

Startup screen of an operating system

The opening screen of an operating system (desktop) includes

1. a set of **icons** called Icons that appear arranged in a specific order over a background image or color selected.
2. **Bars** contain icons represent installed software and other icon for adjusting system settings such as the date, configuration and time

Note, dear student:

- The startup screen varies for different operating systems.
- The startup screen of an operating system varies depending on the version of the operating system.





Exercises on Lesson 3

1 Choose the correct answer:

- 1 _____ is an interface between the user, hardware and software.
a. Computer accessories b. Operating System
c. CPU d. Smart devices.
- 2 Operating systems are necessary for managing _____.
a. Smart devices only b. Televisions only
c. Non-digital devices d. All electronic devices
- 3  The _____ software is responsible for managing the hardware components and running all other software.
a. operating Systems b. antivirus
c. Word processing d. Painter
- 4 Desktop computers commonly use operating systems like _____.
a. Android and iOS b. Windows and macOS
c. iOS and Linux d. Android and Tizen
- 5  Operating systems like Android TV, Tizen, webOS, etc. are used with _____ devices.
a. television b. server c. print d. networking
- 6 Smartphones typically run on _____.
a. Windows Server b. macOS
c. iOS and Android d. Linux and Unix
- 7  _____ devices are network equipment that requires an operating system to operate.
a. Television b. Printing c. Smart watches d. Routers
- 8 ATM machines operate using _____.
a. industrial control systems b. embedded systems
c. gaming consoles d. desktop OS
- 9  _____ is an electronic device through which the customer can pay for the products he has purchased.
a. POS Terminal b. ATM
c. Industrial control system d. Smart watch

Lesson 4: - Installation and Removal of Software and Digital Peripherals

- While preparing and setting up to execute your project on a computer or mobile device, you will need to use various programs. You must ensure that these programs are available on the device.
- If the operating system does not have the program you need, you can get it yourself, either from a storage unit or by downloading it from the internet. You can then install the program on your computer to use it.

How you start the installation process depends on the form in which the program comes.

- If you purchased the program, it comes on a CD or DVD, and you use this disc to install the program.
- On the other hand, if you downloaded the program from the internet, it will be in the form of a file, and this file is used to install the program.

Installing a program from a CD or DVD

1. Insert the disc into your computer's CD or DVD drive. An AutoPlay dialog box appears.

The following screen displays one of the processes that takes place in Windows 7

2. Click on Run SETUP.EXE, where SETUP.EXE is usually the name of the installation program.

3. Follow the installation instructions provided by the program



- **Note:** Installation procedures different from one program to another,

Second installing a program from an Internet-downloaded file:

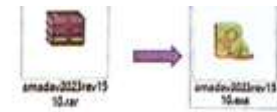
- 1- Use the "This PC" icon to access the downloaded file.
- 2- Double-clicking the file starts up the installer. Note: The downloaded file may be compressed. You need to unzip it first to access and select the SETUP.EXE icon.



Third, Installing a program from a compressed file:

- 1 Extract the compressed files.

Then double-click the installation file.



3. Follow the installation instructions provided by the software.

Remove or Uninstall a Program

- When you plan to stop using a program installed on your computer or mobile, you should uninstall the program from your device.
- Uninstalling a program means that you delete all the files of the program that you want to remove from your computer.

Two methods to uninstall a program

- 1 The program does this itself, as many programs come with their own uninstallation command.
- 2 Through the Control Panel, where the operating system helps you uninstall the program.

- **Note:** Removing unused programs saves disk storage space and speeds up and eases the use of the device.

Steps to Uninstall a Program:

- 1- Open the Control Panel window.
- 2- Click on Uninstall a program to display the installed programs window.
- 3- Click on the program you want to uninstall, then click Uninstall.



Setting Up and Configuring Hardware

- Operating systems support many devices attached to the computer such as printers, webcams, scanners, etc., depending on the type of operating system.
- The operating system automatically detects the new attached device and installs the correct driver so that you can use the new attached device with its full features.

Installing a New Device:

- In many cases, new devices come with a setup CD or DVD that contains driver files and utility programs.
- The setup program automatically copies the driver files and the setup information file (inf.) into a dedicated folder.

Installing a Plug and Play Device

First: When the operating system includes a driver that matches the new peripheral device.

- Modern operating systems include a list of drivers for many peripheral devices.



When you connect a new Plug and Play device for the first time, the operating system detects the new peripheral and searches its list of drivers for the appropriate driver for the new peripheral.

- If it finds a matching driver, it installs the correct driver file(s) and makes other necessary adjustments to the system without any intervention from you.

Second When the operating system does not include a matching driver for the new accessory

- When the operating system detects a new Plug and Play device (after connecting it to a USB port, for example) but cannot determine the appropriate driver for this new device, the operating system runs a wizard program to find the driver for the new peripheral,
- You can determine where the driver for the new peripheral is located, whether this program is on a CD or other storage device.

Installing a Printer

First: - Installing a local printer (Directly Connected to the Computer) that supports Plug and Play.

- Connect it to a USB port, and the Plug and Play feature will automatic handle the installation.

Second:- Installing a non-plug and play printer

- Printers that do not support Plug and Play may require some additional setup steps.

Open the Control Panel → Select "Hardware and Sound" → "Devices and Printers"



Click on "Add a Printer."

- We press the printer that I desire is not listed.

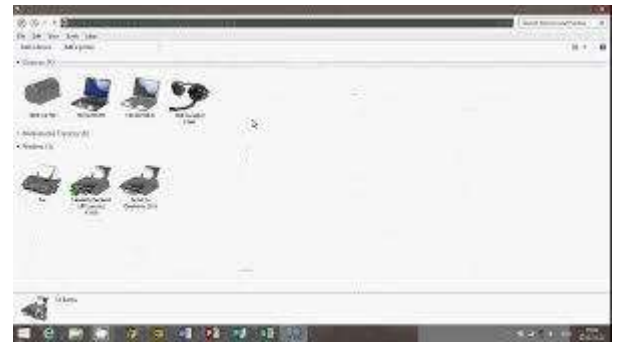
Choose a device or printer to add to the PC

- Select Add a local printer or network printer with manual settings.

To complete the setup process:

- First, you need to determine which port your printer is connected to.
- For most older printers connected via a parallel port, the correct choice is the LPT1 port,
- Modern printers typically use the USB port,

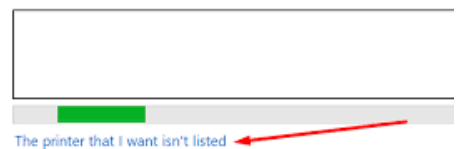
- Click 'Next' to choose the appropriate driver.
- From the list of drivers available in the Driver Store, you can choose the one that is compatible with your printer type.



Add a device

Choose a device or printer to add to this PC

Searching for devices



If you do not find the required driver:

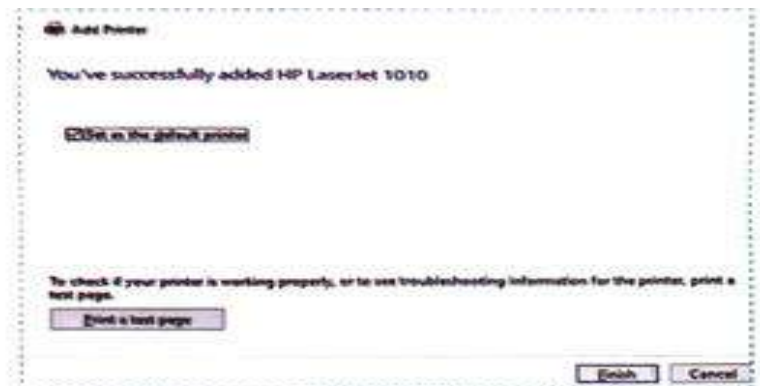
- Click on "Have Disk,"
- Browse your storage devices for the driver you need.
- If you do not have a printer driver or suspect a newer version is available, click on "Windows Update" to update the list of printers.

- After the update is complete, check the list again to see if your printer model is now available.

- The final step in the printer setup process is to name the printer. The default name usually includes the manufacturer's name and printer model; you can change this to a more descriptive name now or later.



After the printer installation process is completed successfully, the wizard provides the ability to print a test page to ensure that the printer is working properly.



Note: If the printer driver package includes a setup program, run the setup program to install the printer within the operating system.

Exercise lesson 4

1 Choose the correct answer from a, b, c or d.

1. The CD in the new device settings contains

a. driver files	b. your digital footprint
c. Maps	d. GPS
2. Control Panel is used for

a. connecting to the internet	b. opening the mail
c. downloading files from the Internet	d. removing or uninstalling programs
3. The file you download might be compressed, so you first need to the file to be able to work with it.

a. save	b. extract	c. install	d. remove
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2 Put (✓) or (x) for the following sentences.

1. We can remove the program without the need for the operating system. ()
2. We can't use the computer without installing any program. ()
3. No program can be installed without the permission of the operating system. ()
4. Operating systems doesn't support any peripheral devices. ()
5. New devices include a CD for setup. ()
6. The program cannot be installed without the user's approval. ()

Lesson 5: - Electronic Mail (Email)

- In previous years, you have learned about some email service providers that help you create an email account.
- In this lesson, you will create an email account using one of the free email service providers and use it to send and receive emails to your teacher or a friend.

Definition of Email

- ✓ A digital communication system used to send and receive messages between users over the internet.
- ✓ It is one of the cloud computing tools.
- ✓ It is used to share texts, files, images, and other information.
- ✓ It is one of the most popular means of communication in the world.
- ✓ It is one of the indirect communication tools.

Components of an Email Address

Example: osama-pony@gmail.com



An email address consists of three main components:

1. User Name:

- The part at the beginning of the email address, chosen by the user.
- It is a unique and distinctive name that is not reserved by anyone else.

2. The @ symbol (at sign):

- Separates the user name from the domain name.

3. Domain Name:

- The name of the email server that hosts the email account, where your emails are stored.
- It is a place to store your email messages.

Advantages of Using Email

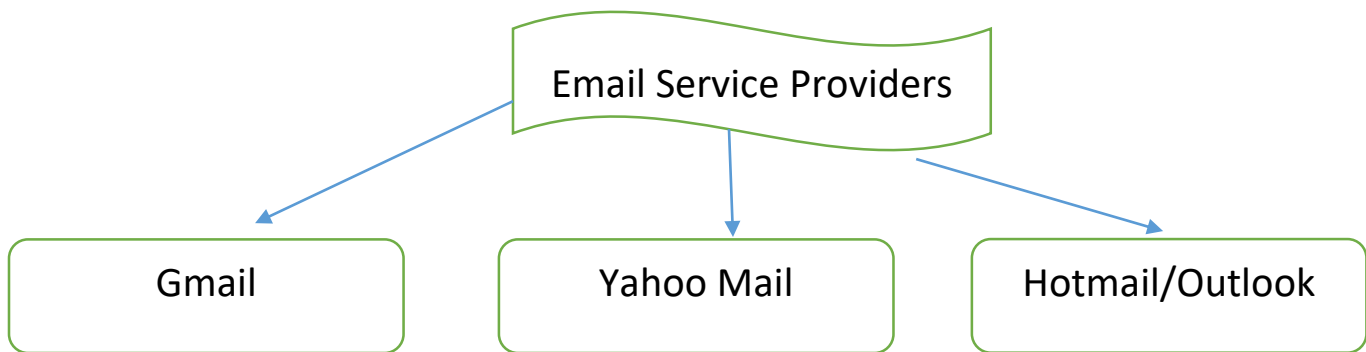
Speed	Sending and receiving messages very quickly.
Cost	Free in most cases.
Ease	Easy to use with the ability to send a message to any number of recipients at the lowest cost.
Diversity	Texts, files, images, and other information can be shared.
Reliability	Messages arrive reliably in most cases.
Digital Services	Registration is done using email on the websites of service providers and digital products online.

Disadvantages of Using Email

Hacking	It can be hacked by hackers.
Spam	You may receive unwanted messages.
Fraud	You may receive fraudulent messages.
Viruses	Some emails may contain viruses or malware.
Privacy	Emails may not be completely secure.

Email Service Providers

>> There are many free email service providers available, such as:



Creating an Email Account on Google

- Google offers many electronic services, including email service.
- To create an email account through Gmail service and obtain other Google services, you need to create a Google Account.

A Google account consists of:

- 1 -a user name
- 2- a password

Advantages of Creating a Google Account

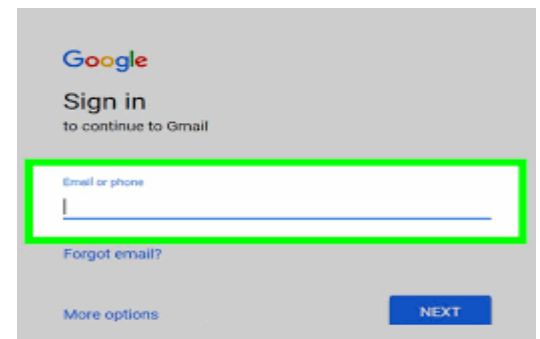
1. It enables you to log in to the Gmail email service.
2. It Enables you to use other Google features and services, such as:
(YouTube –google drive _ google Docs –google meet)

Steps to Create a Google Account

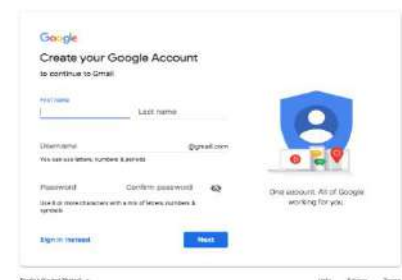
- 1)Go to the Google website:
<https://www.google.com.eg>
- 2) Click "Sign in".
- 3) Click on "Create Account".



4) To establish a Google account, choose "Create my personal account."



5) Insert your 'First name' and 'Last name', then click the 'Next' button.

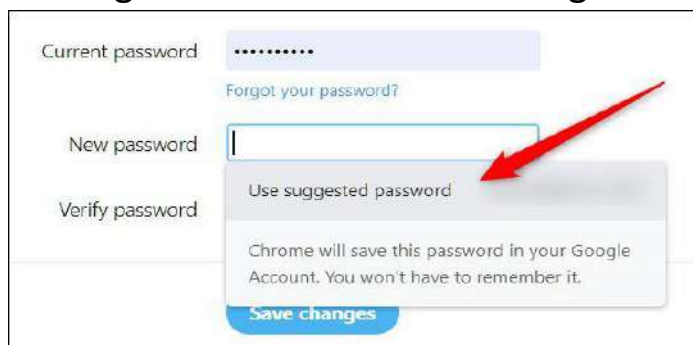


6) Enter your date of birth and gender, then click 'Next'.

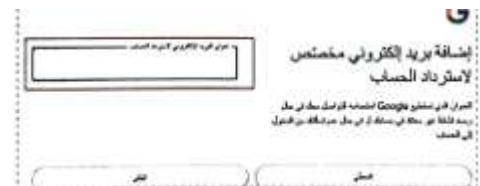
7) Type the username you want in the 'Username' field and then click 'Next'



8) Choose the password you want, and confirm it again, making sure that it is difficult to guess.



9) Enter an alternative email address used to recover the account and you can skip this.



10) Check and confirm your email address.



11) To complete the steps to create your email, review the terms of service and click 'I agree' if you accept them.



12) Now that you have a 'Google Account' (username and password), you can use your 'Google Account' to access your email or many of the services provided by 'Google'.

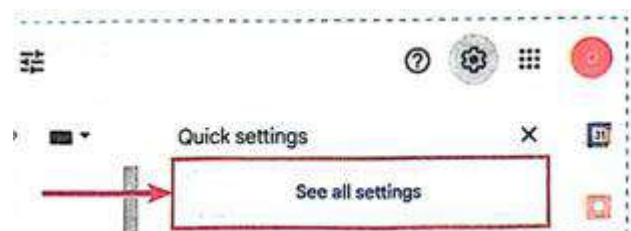


Gmail email interface

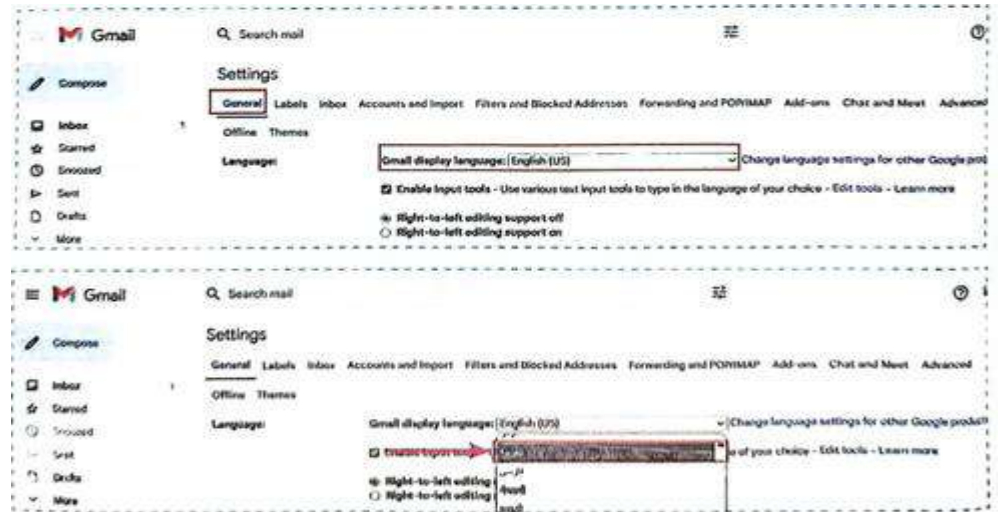
➤ The default appearance of the Gmail window is following



➤ The interface language can be modified by selecting the settings icon and then choosing 'See all settings'.



- From the "General" menu, select the Arabic language under "Gmail display language".



- When you choose the Arabic language and click the 'Save Changes' button, the Gmail email window interface appears in Arabic, as shown below:

Sign out of your Gmail account

>> Click on your profile picture icon and then choose 'Sign out'.



Exercise lesson5

1 Choose the correct answer from a, b, c or d.

1. The user name in an email address is
 - a. determining the user's nationality
 - b. to delete email messages
 - c. used to remove the email account
 - d. a unique and distinctive name that is not reserved by anyone else
2. The symbol @ in an email address
 - a. separates the user name from the domain name
 - b. is used to send and receive email messages
 - c. is used to create email messages
 - d. is an optional and non-essential symbol
3. Which of the following is considered a correct email address ?
 - a. Ayman22_2@gmail.com
 - b. zizo@mohamed
 - c. Omar2203_4\$gmail.com
 - d. Tarek30#gmail.com
4. is one of the advantages of using email.
 - a. Speed in sending and receiving messages
 - b. High cost
 - c. Spam
 - d. Informal communication tools
5. The importance of using the Gmail service is to
 - a. not allow us to communicate with others
 - b. communicate with government agencies only
 - c. access to many Google services
 - d. have difficulty in sending files

2 Complete the following sentences.

1. provides service for creating email.
2. Email is one of the tools of communication.
3. is the part that located at the beginning of the email address.
4. separates the user name from the email server used.
5. is used to access email on Google.

Lesson 6: -cloud computing

Cloud Computing

- It is a model for providing digital services over the internet, such as:

1. **Cloud Storage Service (Computer Storage):** It's storing files and folders over the internet.
2. **Software Service (Applications) over the Internet:** It's making software (applications) available over the internet.
3. **Electronic Resource Sharing Service:** It's sharing and exchanging files with others over the internet.

Benefits of Cloud Computing

- 1) **Ease of access:** Cloud computing services can be accessed without the need for a high-specification computer or mobile device, whether for hardware or software components.
- 2) **Service availability:** Users can access their data, files, and applications from anywhere where the internet service is available.
- 3) **Reducing material costs:**
 - There is no need to purchase software licenses.
 - There is no need to purchase high-specification hardware.
- 4) **Sharing digital resources with others.**

Applications of Cloud Computing in Daily Life

- Some examples of cloud computing applications in daily life include:

1. Communication:

Email: We use cloud email services like Gmail, Outlook, and Yahoo Mail daily allows for easy communication with family, friends, and colleagues.

Social networking: We communicate with others and share content on social media platforms like Facebook, Twitter, and Instagram.

- **Messaging services:** We use messaging applications like WhatsApp and Telegram to communicate and share files and photos.

2. Computer Storage:

- **File storage services:** We use services like Google Drive and OneDrive to store, share, and access files anytime and anywhere.
- **Data backup:** We use cloud backup services to protect data against loss in case of device damage.

3. Producing projects by using:

- **Word Processing Programs:** We use cloud word processing programs like Google Docs and Microsoft Word Online to create, edit, and share documents with others.
- **Spreadsheets:** We use cloud spreadsheets like Google Sheets and Microsoft Excel Online to organize, analyze data, and create charts.

4. Education:

- **E-learning platforms:** We use e-learning platforms to access educational materials and interact with teachers and students, such as the Ministry of Education platform.
- **Collaboration tools:** We use cloud collaboration tools like Google Classroom and Microsoft Teams to work on projects and tasks with others.

5. Entertainment:

Video streaming services: We enjoy watching movies, TV shows, and programs on video streaming services like YouTube.

Online video games: We play video games online on cloud platforms.

Cloud music services

6. Other areas:

- ❖ **Online shopping:** We shop through e-commerce websites.
- ❖ **Online banking:** We use online banking to transfer money and pay bills.
- ❖ **Healthcare services:** We use cloud computing to store medical records.

Data Processing and Storage in Cloud Computing

- Data processing and storage in cloud computing depends on a huge infrastructure.
- The steps for data processing and storage in cloud computing can be summarized as follows:
 1. Data Collection: From different sources.
 2. Data Transfer: To cloud data centers.
 3. Data Processing: In cloud data centers through powerful servers.
 4. Data Storage: Storing data on high-capacity storage units in cloud data centers.
 5. Data Management: Data is managed by database management systems in cloud data centers.
 6. Data Access: Data can be accessed by users and applications through the internet.



The most famous cloud computing service providers



Exercise lesson6

El-Moasser Exercises

1 Choose the correct answer from a, b, c or d.

- is one of the uses of cloud computing in the field of storage.
a. Google Drive b. Word c. Excel d. Telegram
- are the uses of cloud computing in the field of producing projects.
a. Word processing programs b. Spreadsheets
c. Both (a) and (b) d. Video games
- We use cloud computing in the field of education through
a. messaging services b. online shopping
c. Google Classroom d. banking services
- All the following are services provided by cloud computing in the field of entertainment except
a. watching YouTube b. video games
c. printing documents d. music services
- All the following are the steps of data processing and storage except
a. data collection b. data transfer c. data processing d. data hacking

2 Complete the following sentences.

- Cloud computing helps reduce material costs because
- Cloud computing can be used in by using word processing programs.
- Cloud computing can be used in , such as transferring money and paying bills.

3 Put (✓) or (x) for the following sentences.

- Cloud computing can be used in multiple fields such as education, health, and entertainment. ()
- Cloud computing works on processing data easily. ()
- You cannot collaborate and communicate with others using cloud computing. ()

Lesson 7: - Google Meet and Project Management

- In previous lessons, you learned about some digital transformation tools, including collaboration and direct communication tools for video calls and online conferences, enabling you to exchange data, information, ideas, and producing projects.
- These tools enable face-to-face communication with others.
- One example is the **Google Meet** application, a service offered by Google.
- To access Google Meet, you'll need a Google account.

Google meet: - it is a video conferencing service developed by google

Google met allows user to: -

1. Conduct group video calls
2. Share screens
3. Chats
4. Collaborate in real _time
5. Work together on join project among students



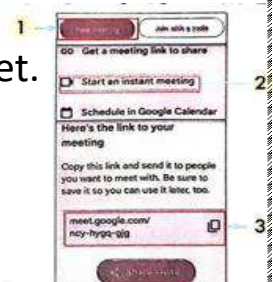
How to Access Google Meet?

1. From a PC via the link: <https://meet.google.com>
2. By downloading the "Google Meet" app for Android devices using the Google Play Store.



Creating a Meeting on Google Meet

>> There are several options for creating a meeting on Google Meet.



1. Starting an Instant Meeting:

1. Go to the main page of the "Google Meet" application.
2. Click on the "New meeting" button.
3. Click on "Start an instant meeting."
4. Click on the "Copy" icon to share the meeting link.
5. Send the meeting link to participants via communication tools (Email, WhatsApp, etc.).

2. Creating a Meeting for a Later Time:

- The "Google Meet" application also enables you to create a meeting for a later time, and keep its link until the time you want to invite to attend.
 1. meet with whomever you want to invite to attend: 1 Follow the same previous steps to create an instant meeting.
 2. Click on "Create a meeting for a later time".
 3. A small window will appear with a link to the session.
 4. Copy the meeting link.
 5. Send the link to the people you want to invite to the meeting.

Note

Sometimes, you may need to approve the invitees' requests to join the session.

When an invitee tries to join your session, a notification will appear at the top of the page, through which you can accept or reject their request.

3. Joining a Meeting on Google Meet:

If you are invited to a meeting in Google Meet via a link:

1. You can join the session by clicking on the link directly.
2. Sometimes, when you click on the meeting link, it may take some time to join until the meeting organizer approves your request to join the meeting.
3. If you are invited to a meeting via a link, do not share the meeting link with others without the meeting owner's permission.

4-During a Google Meet Meeting:

- Whether you are the organizer or an invitee, you can use many options and features that help you follow the meeting in an organized, enjoyable, and useful atmosphere. If you're the organizer, you'll also have the ability to manage the session and control invitees.

General Rules to Follow During the Meeting

- While one participant is speaking, others should listen and mute their microphones.
- Raising your hand to ask to speak helps organize the sessions, talk, and intervene in an organized and smooth manner.
- When you are allowed to speak, the microphone icon will open and you can speak.
- Sending messages during the session:
 - You can communicate with attendees by sending messages to participants by clicking on the "In-call messages" icon at the bottom of the page.

- Sharing the presentation with participants:

- You can share your entire screen or a window with participants. •

At the bottom of the page, click on

the "Share screen"

icon, then select one of the tabs (Entire screen, Window, or Tab).



- Stop sharing a presentation:

In the Google Meet window, click "Stop sharing."



Exercise lesson7

1 Choose the correct answer from a, b, c or d.

1. Having is one of the conditions for using the Google Meet application .
a. smartphone
b. computer
c. Google Account
d. a specific program
2. One of the advantages of using the Google Meet application is the ability to
a. make group calls
b. edit images
c. play games
d. delete files
3. You share your screen with your colleagues during a Google Meet meeting by clicking on "....." icon.
a. Share Screen 
b. Hand
c. Save
d. Copy
4. You can stop sharing the presentation with your colleagues during a Google Meet meeting by clicking on ".....".
a. Stop sharing
b. Save link
c. Stop installation
d. Turn off the microphone
5. Click on the "....." icon to ask to speak during the Google Meet meeting.
a. Hand 
b. Camera
c. Microphone
d. Message

2 Complete the following sentences.

1. You can send a message to other participants in a Google Meet meeting through
2. One of the tips for a successful Google Meet meeting is
3. To access the Google Meet application, you must have
4. The Google Meet service allows users to

Lesson 8 :-Databases Design

Database:

- It is a collection of data and information organized and linked to each other.
- It is similar to a library in which books are kept, but instead of books, data and information are stored.
- A database is used to **store** and **retrieve** information easily and efficiently.
- Information is stored and managed digitally using dedicated programs and applications.



Importance of Databases in Our Lives:

1. Saving students' information at school: such as names, dates of birth, and home addresses, etc.
2. Saving medical records in hospitals: including information like the patient's name, address, attending physician's name, and the date of patient's last visit.
3. Tracking inventory in stores: such as the product name, manufacturer, manufacturing date, and price.

Advantages of Using Databases:

- **Organization:** Easy storage and retrieval of data
- **Efficiency:** Quick access to data
- **Accuracy:** Ensuring data correctness and reducing errors
- **Security:** Protecting data from unauthorized access
- **Sharing:** Making data available to multiple users
- **Sharing:** make data valuable to multiple users

Uses of Databases:

- Websites: such as storing user and product data
- Data analysis: such as analyzing big data and extracting knowledge
- Scientific research: such as storing and analyzing experimental data.
- Business applications: such as customer relationship management systems and enterprise resource planning systems.

Big Data

- Big Data refers to very large and diverse sets of structured, unstructured, and semi-structured data that continue to grow significantly over time.
- These data sets are so large and complex in terms of size, growth rate, and diversity that traditional data management systems cannot store, process, and analyze them.
- The amount of data is increasing rapidly due to the rapid development of digital technology, such as Artificial Intelligence (AI) and the Internet of Things (IOT).
- As data continues to increase, expand and spread, new big data tools emerge to help companies collect, process, and analyze data at the speed needed to get the most out of it.

Data Table

- ✓ A spreadsheet is a basic element in building databases and is the only source of data within a database.
- ✓ A spreadsheet consists of rows and columns,
- ✓ Each row represents a single record of data.
- ✓ Each column represents a specific field of data.
- ✓ Creating a Data Table
- ✓ Many programs can create spreadsheets, such as a "Students Grades" spreadsheet.

No.	Student Name	Arabic Grade	English Grade	Computer Grade
1	Amr	19	18	19
2	Yassmin	20	17	16
3	Ramy	15	19	14
4	Samar	17	18	16

Programs Used to Create a Spreadsheet

- Using Word and Excel, you can create a "Students Grades" spreadsheet.
- In Word, you can create a simple table but cannot get a record of all students whose names include the letter "Y". Word is used for creating simple spreadsheets.
- In Excel, you can arrange and sort students' grades and perform simple calculations.
- But Excel is difficult to use if you have a large amount of complex data.

Microsoft Access

- It is an application used to create databases.
- It builds a real database.
- It allows you to build a complex data structure and manage it more efficiently.



When do we use Microsoft Access?

We use Microsoft Access when:

- You have a large amount of complex data.
- You need to create relations between data.
- You want to create custom applications to manage data.
- You need higher data security.

Creating a "Students Results" Database

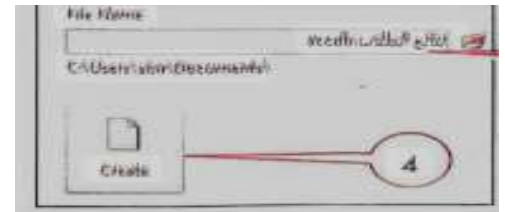
You can create a database named "Students Results" by following these steps on your computer:

1. Open Microsoft Access
2. Create a database and name it "Students Results".
3. Record the steps you have taken

Steps to Create a New Database in Microsoft Access

1. Open the Access program.
2. Select Blank desktop database to create a new blank database.
3. Type a name for the database, such as "Students Results".
- 4 Click "Create".

A database will be created under the name "Students Results".



Steps to Create a Table in Access

You can create a table in Access by doing the following:

Databases Design

- ✓ **Table Design:** To write the names of the table fields and specify their data type.
- ✓ **Datasheet View:** To enter and display the table data.

First Table Design

To choose the "Table Design" mode, follow these steps:

1. Choose "CREATE".
2. Select "Table Design".



Table Design Window Interface

❖ When the "Table Design" window opens, it consists of:

1. Field Name: To write the name of the field.
2. Data Type: To choose the statement type.
3. Design view mode



Example of steps to design a "Students Grades" table:

- ✓ In the Table Design window, create table fields by writing the field name and selecting the field data type.
- ✓ Write the following field names and choose their data types:

(Student ID – Name – Arabic grade – Computer grade - English grade)

1. Write the field name "**ID**" for the student number.
2. Choose the field data type from the dropdown list as "**AutoNumber**".
3. Write the rest of the fields names and select the appropriate data type for each field.



Save the table:

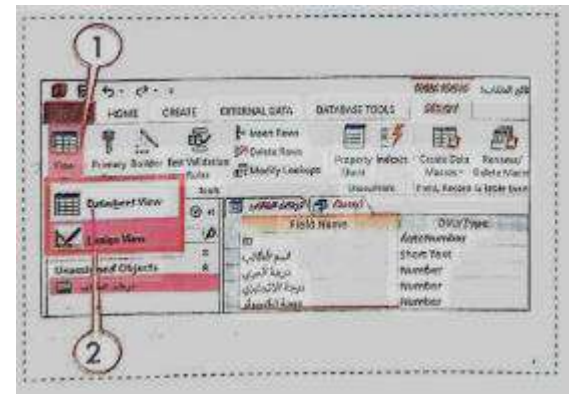
To save the table:

1. Click the save icon.
2. Enter the table name "Students Grades".

Second Datasheet View

To enter and view the table data:

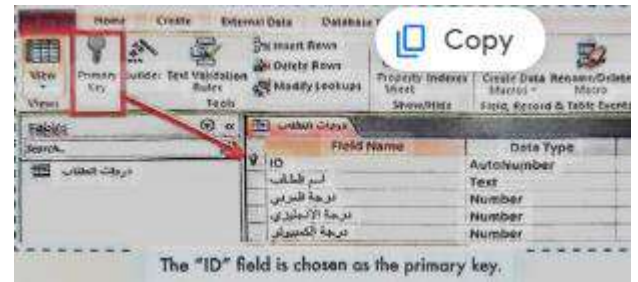
1. Select "View".
2. Choose "Datasheet View".
3. The following Data view window will appear
4. Enter your data and your colleagues' data into the table.
5. To return to Design View from "View", select "Design View".



Primary Key

- ✓ The primary key is a field in a database table that is used to uniquely identify each record in that table.
- ✓ The value of the primary key is never repeated within the same table.

Primary Key for the "Students Grades" Table The "ID" field is chosen as the primary key because it is an automatic number given to the student and each student has a unique number that is not repeated by any other student.



Exercise lesson8

1 Choose the correct answer from a, b, c or d.

1. are a collection of organized and related data and information.
a. Databases
b. Records
c. Documents and images
d. Numbers
2. All of the following are advantages of using databases except
a. efficiency
b. accuracy
c. organization
d. difficulty in accessing data
3. "Big Data" is, sets of data.
a. small
b. medium
c. tall
d. huge, organized and unorganized
4. The "Data Table"
a. is an essential element in building databases
b. is a secondary element in building databases
c. is an unnecessary element in building databases
d. consists of rows only
5. The correct way to save a Data Table in "Access" is by clicking on icon.
a. "New"
b. "Create"
c. "Start"
d. "Save"
6. The correct way to enter and display "Data Table" in "Access" is through "....."
a. Design View
b. Table design
c. Datasheet View
d. Screen View

2 Complete the following sentences.

1. The Word program is used to create data table.
2. Information is stored and managed digitally in databases using dedicated
3. Information can be retrieved from databases in a/an way.
4. Databases allow data.

Lesson 9: -Forms & Queries

Form

- A form is a graphical interface specifically designed to interact with data stored in the database.
- >> It is a screen that displays specific information from the database.
- It allows the user to enter, modify, or delete this information in an organized and convenient way.

Creating a Form

- A new form named "Enter Students Grades" can be created using the Form Wizard.
- Creating a form from the current table "Students Grades"

1. Click on the table name "Students Grades" in the Navigation Pane on the left side of the screen.

The data from the "Students Grades" table will appear on the right side of the screen.



2. Choose the Create tab.
3. Click Form.

>>> The Access program creates the form that displays each student's record individually, as shown in the following figure:



1. The current window is called **Layout View**, where the data of the first record is displayed.
2. Click the **Next Record icon** to display the data of the next record.
3. Click the **Last Record icon** to display the data of the last record.
4. Click the **First Record icon** to display the data of the first record.

NOTES:

- The form is used to enter and modify data in the "Students Grades" table.
- All data entered through the form appears in the "Students Grades" table.
- Data can be entered through either the datasheet or the form.

There are several other ways to create a form in an Access desktop database.

Second: Queries

- Queries are tools used to obtain data from the database according to specific criteria or conditions.
- Through queries, information can be obtained from the database based on the data stored in it.

Examples of queries:

- ✓ Creating a query to display data from a student's record
- ✓ Creating a query to display a list of students who scored more than 18 marks in English

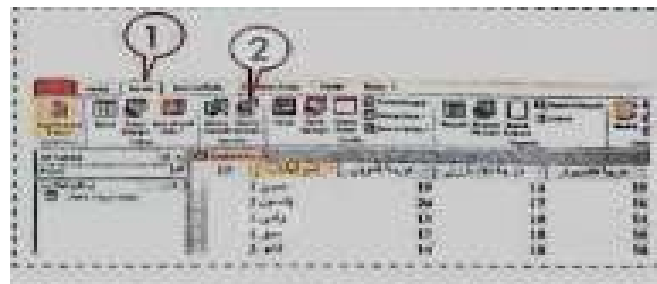
Create a New Query Using the "Query Design" Method

- Microsoft Access provides many methods to create queries, including using the Query Design view, which we will discuss.
- When using the Query Design method, you can have greater control over the details of the query design.

Steps to Create a New Query Using the Query Design method

1. Choose the **Create** tab.

2 Click on **Query Design**".



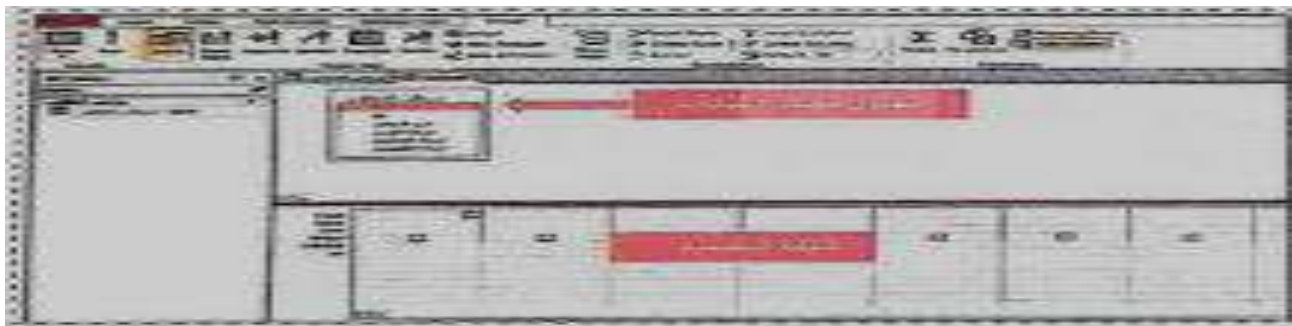
3 . The following window will appear.

4 . Select the data source table you want to use, which is "**Students Grades**".

5 . Click "**Add**", then "**Close**".



- ❖ The "Design View" window will appear, which is divided into two parts.
- ❖ The upper part contains the data source table.
- ❖ The lower part is the query design grid.

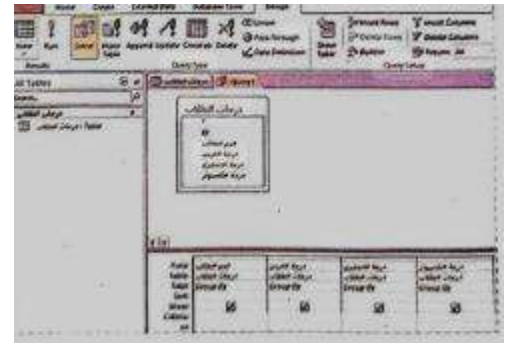


- Now, to create a query that displays the names of all students and their Arabic grades only, follow these steps:
- In this query, we will deal with fields from the "Students Grades" table.
- To do this, list the field names on the query design grid.

Adding a Field to the Design Grid

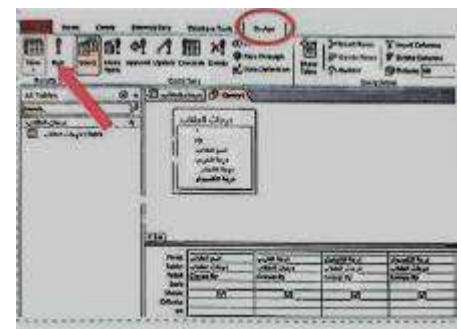
1. Use the drag-and-drop method for the field name.
2. Drag the field from the data source table in the upper part of the "Query Design" window to the design grid, specifically to the "Field" row in the lower part of the "Query Design" window.

- When you add a field by dragging and dropping in the design grid, Access automatically fills the Table row with the name of the table used ("Students Grades"), indicating the data source for that field.
- Insert the rest of the table fields into the design grid as shown in the following screen



Execute the Query

- From the Design tab:
- Click the Run icon in the Results group.
- The query result appears in the form of a table, showing all students' data.



To hide a field or fields from the query result:

- From the View menu, choose Design View.

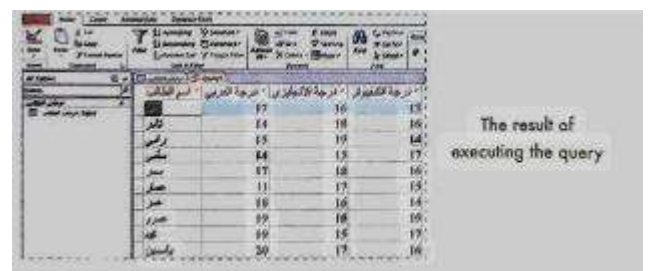
The query design window will appear.

- Click on the sign **▼** in the check box in the Show row of the design grid under the Computer score and English score columns to uncheck them.

➤ The sign will be removed, which means hiding the field/fields in the query result.



>>> When you remove the sign **▼** from the English score and Computer score columns in the Show Row in the design grid, this means that these two fields will not appear when executing the query.



3. Run the Query:

Click the Run icon in the Results group. The result will display as follows



اسم الطالب	درجة العربي	درجة الإنجليزي	درجة الكمبيوتر
ياسمين	17	16	13
كثير	14	18	16
رائي	15	19	14
مينا	14	13	17
نميز	17	18	16
عنان	11	17	15
عبد	18	16	14
مبارك	19	18	19
محمد	19	15	17
ياسمين	20	17	16

Establishing Criteria or Conditions within the Query

- ✓ The Criteria in a query helps you to identify specific items in an Access database.
- ✓ If a record matches all the criteria you entered in the query grid, it will appear in the query results.

How to Add Criteria or Conditions in a Query?

- ❖ To add criteria to a query, follow these steps:

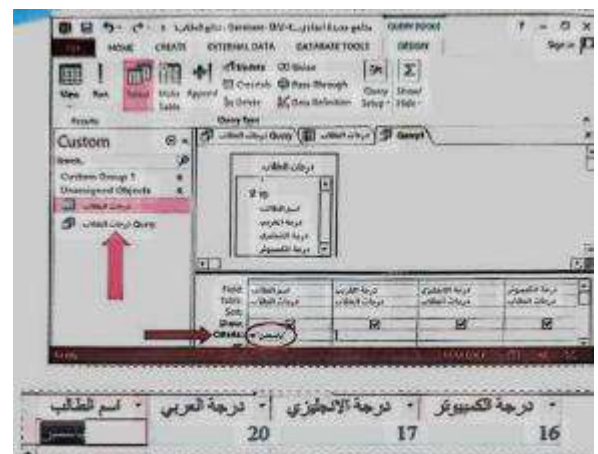
1. Open the Query in Design View.
2. Write the criterion or criteria in the Criteria row.

For example,

To create a query that shows the record of the student "Yasmin" only, follow these steps:

1. Type the search criterion "Yasmin=" in the "Student Name" column in the Criteria field.
2. When you execute the query, the student record or records that meet the criterion or condition are displayed.

>>> The result of executing the query is as shown in the figure.



Exercise lesson9

1 Choose the correct answer from a, b, c or d.

1. are defined as a graphical interface designed specifically to interact with stored data.
a. Forms b. Queries c. Images d. Numbers
2. The " " program can browse large data stored within a database.
a. Word b. Access c. Paint d. Excel
3. You can use " " to obtain the data you want within a database.
a. data processor b. scientific presentation program
c. paint program d. queries
4. The " " option is used to identify specific items in queries.
a. View b. Format c. Insert d. Criteria
5. You can create a new query from a data table in Access by selecting " ".
a. Insert b. Create c. Open d. Delete

2 Complete the following sentences.

1. A new form is created from the current "Student Grades" table by
2. The form is used to data in the "Student Grades" table.
3. You can create a new query from the database using
4. One of the types of queries that can be created in databases is
5. Specific conditions or criteria can be applied to the query through
6. Fields can be added to the query through

Lesson 10: - Your Digital Project

- ❖ In previous years, you have learned how to create a digital project using various methods, such as:
 1. Presentations using PowerPoint
 2. Designing posters
- ❖ Now, we will delve deeper into the stages of executing your digital project.

Stages of Project Execution

The stages of any successful project are interconnected; each contributing to achieving the desired goals. They can be summarized as follows:

1. Project Initiation

- Define a Clear and Achievable Idea: Ensure the project idea is realistic and feasible.
- Set Specific, Measurable, and Achievable Goals: Establish clear objectives that can be measured and attained

2. Project Planning

Develop Detailed Plans: Create comprehensive plans that include a detailed work plan. Set a Specific Timeline: Establish a defined schedule for each phase of the project.

Identify Project Requirements: Determine all necessary resources and requirements for the project.

3. Project Execution

Form a Team: Assemble a team to work on the project.

- **Assign Roles and Responsibilities:** Clearly define the roles and responsibilities of each team member.

Commence Work: Begin the actual execution of the project according to the established plans.

4. Project Evaluation and Adjustment

Continuous Monitoring and Evaluation: Regularly track the project's progress, compare performance against the plan, and make necessary adjustments.

Problem Management: Identify potential issues that may arise and take proactive steps to mitigate or avoid them.

- **Final Delivery and Evaluation:** Deliver the final project outputs and evaluate the overall success.
- **Document Lessons Learned:** Record all lessons learned from the project execution to benefit future projects.
- **Acknowledge and thank everyone** who contributed to the project's success.

Digital Applications and Tools Needed for Project Execution

Google Applications Required During Project Execution:

Google Docs: A cloud-based application for creating text documents.

Google Sheets: A cloud-based application for creating spreadsheets.

Google Slides: A cloud-based application for creating presentations.

- To use these applications and other Google cloud services, you need

To sign in with your Google account, which you have previously created.

Signing in to Your Google Account

➤ Follow these steps to sign in:

1. Open the browser: Type Google.com in the browser.
2. Select the Google apps icon.
3. Choose the Drive icon.
4. Type your username.
5. Click Next.
6. Type your password and then press Next.
7. You have now signed in to your Google account. The following screen will appear.

8. Click on New:

Now, you can open various cloud applications that appear in the list, including Google Slides, Google Sheets, and Google Docs, and use them for your project.

